U.S. Department of Health and Human Services

Office of the National Coordinator for Health Information Technology

Remote Consultation
Prototype Use Case
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1.0 Preface

Use cases developed for the American Health Information Community (AHIC) are based on the priorities expressed by the AHIC workgroups. These high-level use cases focus on the needs of many individuals, organizations, and systems rather than the development of a specific software system. The use cases describe involved stakeholders, information flows, issues, and systems needs that apply to the multiple participants in these arenas.

The use cases strive to provide enough detail and context for detailed policy discussions, standards harmonization, certification considerations, and architecture specifications necessary to advance the national health information technology (HIT) agenda. These high-level use cases focus, to a significant degree, on the exchange of information between organizations and systems rather than the internal activities of a particular organization or system.

During the January 2007 AHIC meeting, nine priority areas (representing over 200 identified AHIC and AHIC workgroup detailed priorities) were discussed and considered. Three of these areas (Consumer Access to Clinical Information, Medication Management, and Quality) were prioritized and developed into the 2007 Detailed Use Cases, which were published in June 2007. The Health Information Technology Standards Panel (HITSP) Technical Committees are currently conducting harmonization work on these use cases.

The remaining six priority areas from the January 2007 AHIC meeting were updated based upon AHIC feedback and were reviewed during the July 2007 AHIC meeting. These six priority areas are now being developed into the 2008 Use Cases (Remote Monitoring, Remote Consultation, Personalized Healthcare, Consultation and Transfers of Care, Public Health Case Reporting, and Immunizations & Response Management) which will be processed in the national HIT agenda activities in 2008.

The 2008 Use Cases are being developed by the Office of the National Coordinator for Health Information Technology (ONC) with opportunities for review and feedback by interested stakeholders within both the private and public sectors. To facilitate this process, the use cases are being developed in two stages:

- The **Prototype Use Cases** describe the candidate workflows for the use case at a high level, and facilitate initial discussion with stakeholders; and
- The **Detailed Use Cases** document all of the events and actions within the use case at a detailed level.

This document is a prototype use case, which describes at a high level the actors, capabilities, and information sharing needs associated with this use case. ONC is publishing the prototype use case at an earlier stage of development in order to incorporate more substantive input from interested stakeholders into the detailed use case.

The prototype use case is divided into the following sections:

- Section 2.0, Introduction and Scope, briefly describes the priority needs identified by one or more AHIC workgroups and preliminary decisions made about the scope of the use case.
- Section 3.0, Use Case Stakeholders, briefly describes individuals and organizations which participate in activities related to the use case and its components.
- Section 4.0, Issues and Obstacles, briefly describes issues or obstacles which may need to be resolved in order to achieve the capabilities described in the use case.
- Section 5.0, Perspectives, briefly describes how the use case combines similar roles (or actors) in order to describe their common needs and activities. The roles are intended to describe functional roles rather than organizations or physical entities.
- Section 6.0, Candidate Workflows, briefly describes how various perspectives interact and exchange information within the context of a workflow. The use case workflow model provides a context for understanding the information needs and is not meant to be prescriptive.
- Appendix A, the Glossary, provides draft definitions of key concepts and terms contained in the prototype.

Also within the prototype document are specific questions for which ONC would like to receive feedback during the development process. Following receipt of feedback from interested stakeholders, ONC will develop a detailed use case, which will incorporate the feedback received, fully describe the events and activities from a variety of perspectives, and include information flow diagrams.

2.0 Introduction and Scope

Patients could consult with their healthcare clinicians remotely using common computer technologies readily available in home and other settings. Enhanced patient-clinician communications and effective management of chronic care conditions could be promoted by this form of consultation. Communication could occur through secure, structured messaging, also known as asynchronous, "store and forward" consultations. These communications could also include caregivers, family members, and patient advocates to further promote and coordinate patient care. Patients could also benefit from prompts initiated by clinicians and their surrogates, which could be delivered via email or other means, to remind patients of recommended events and activities that are important to maintaining their level of health. Sensitive health information related to these prompts and reminders would need to be provided in a secure communication channel. In specific terms:

- Giving patients the ability to compose and send a secure, structured, communication to a clinician will give them better access to their providers and medical information.
- Similarly, clinicians will benefit from having the ability to respond to (or initiate) secure, structured, communications to facilitate the care process and promote better patient health. This communication will be done in a manner which provides appropriate information to the patient and meets needs for clinical documentation.
- Giving clinicians the ability to securely communicate reminders to patients and their family members will promote preventive health. These reminders could include items such as annual check-ups, cancer screening (mammograms, colonoscopies, etc.), and immunizations.

One of the goals of the AHIC is establishing a pathway, based on common data standards, to facilitate the incorporation of interoperable, clinically useful remote consultation information into electronic health records (EHRs) to support clinical decision-making. This use case was developed to support the many stakeholders who are active in the development and implementation of EHRs and HIE including those engaged in activities related to standards, interoperability, harmonization, architecture, policy development, and certification.

The Remote Consultation Prototype Use Case focuses on the exchange of structured messages in three candidate workflows:

- **Patient-to-Clinician Communication** - This workflow is focused on the patient's ability to use computerized technologies that are readily available, such as secure web access, to communicate with clinicians using secure, structured messaging capabilities.

- **Clinician-to-Patient Communication** - This workflow includes the ability of clinicians to initiate communications to the patient and respond to their communications.

- **Clinician-to-Patient Reminders** - This workflow focuses on the ability of a clinician to send relevant clinical reminders to patients regarding medical screening examinations, regular diagnostic tests, or wellness activities.

This use case assumes the developing presence of electronic systems such as EHRs, Personal Health Records (PHRs), and other local or Web-based solutions supporting patients and clinicians while recognizing the issues and obstacles associated with these assumptions. This approach helps promote the development of longer-term interoperability efforts.

3.0 Use Case Stakeholders

Figure 3-1. Remote Consultation Use Case Stakeholders Table

Stakeholder	Working Definition
Care Coordinators	Health support personnel who provide assistance to patients and their surrogates in the management of health and disease conditions.
Clinical Decision Support Tool Providers	Organizations that provide tools to aid in the understanding and treatment of health and disease conditions. These tools encompass a wide range of capabilities that may be useful and available to patients, consumers, clinicians, and other health professionals.
Clinical Support Staff	Individuals who support the workflow of clinicians. For this use case, this may be by receiving and evaluating communications from consumers or patients, and then engaging the appropriate clinician in the response to the patient.
Clinicians	Healthcare providers with patient care responsibilities, including physicians, advanced practice nurses, physician assistants, nurses, and other credentialed personnel involved in treating patients.
Consumers	Members of the public who may receive healthcare services. These individuals may include: caregivers, patient advocates, surrogates, family members, and other parties who may be acting for, or in support of, a patient.
Healthcare Entities	Organizations that are engaged in, or support the delivery of, healthcare. These organizations could include hospitals, ambulatory clinics, long-term care facilities, community-based healthcare organizations, employers/occupational health, school health, dental clinics, psychology clinics, care delivery organizations, and other healthcare facilities.
Healthcare Payors	Insurers, including health plans, self-insured employer plans, and third party administrators, providing healthcare benefits to enrolled members and reimbursing provider organizations. Case management or disease management may also be supported.
Patients	Members of the public who receive healthcare services.

ONC would like to receive feedback on the draft list of stakeholders and their descriptions for this use case. Please suggest additions, deletions and/or revisions to the description of the stakeholders.

4.0 Issues and Obstacles

Implementing remote consultation as a tool to support secure, structured communications between patients and clinicians is dependent on overcoming a number of issues and obstacles in today's healthcare delivery environment. However, this use case recognizes that some of these issues will be addressed through policy development, current HIT standardization and harmonization activities, HIE networks, and other related initiatives. While progress is being achieved on some of these concerns, a broad summary of relevant issues and obstacles to remote consultation is included below.

Business Model

- Reimbursement
    - Clinicians may not be able to bill for time spent with (and expertise provided to) patients during remote consultation.
    - Expenditures for patients and clinicians to support remote consultation may not be reimbursable.

Confidentiality, Privacy, Security, and Data Access

- Patient data confidentiality and privacy
    - Patients will want confidentiality, access control and information describing who has had access to their information.
- Security and data access
    - Personal health data must be appropriately secured whenever stored, transmitted, archived, or destroyed.

Communication Technologies

- For asynchronous communications, standards must be established to provide for secure structured communications.
    - Appropriate capture and archival of these communications within EHRs must also be identified.

EHR and PHR Use

- Limited penetration of EHRs and PHRs may pose an obstacle to the effective use of remote consultation.

- The quality and structure of data will impact the appropriateness of reminders for patients. These reminders are dependent on an accurate, reliable, and up-to-date medical history to alert patients about the appropriate steps to take for disease prevention and/or management

Medical Practice and State Laws

- Widespread remote consultation may require analysis and possible changes to existing laws and regulations related to treating patients across jurisdictional boundaries.
- Medical practice may be inhibited by additional administrative burden and legal concerns**.**

Decision Support

Decision support tools can provide assistance to patients, care coordinators, and clinicians who use remote consultation to support health and disease management. Although these tools are not widely used today, they can provide support for:

- Patient education.
- Identification of appropriate reminders for prevention and health promotion.
- Identification of alerts/notification conditions when emergency care should be sought rather than a remote consultation.
- Recent research findings and "best practice" methods.

ONC would like to receive feedback on the draft list of issues and obstacles and their descriptions for this use case. Please suggest additions, deletions and/or revisions.

5.0 Use Case Perspectives

The Remote Consultation Prototype Use Case focuses on the ability of patients to communicate with their healthcare clinicians remotely using computer technologies readily available in home and other settings. The use case will describe remote consultation from three perspectives. The perspectives are representative of roles and functions, rather than organizations or physical locations.

Each perspective is described below:

- **Patients**

  The patient (or consumer), caregivers, patient advocates or surrogates, family members, and other parties who may be acting for, or in support of, a patient could use remote consultation capabilities to interact with clinicians using structured messaging capabilities.

- **Clinicians**

  Clinicians may receive and respond to structured messages from their patients/consumers. Clinicians, or their EHR systems, may also initiate clinical reminders and similar messages for patients.

- **Clinical Support Staff**

  The Clinical Support Staff perspective includes those individuals who support the workflow of clinicians by receiving and evaluating communications from consumers or patients, and then engaging the appropriate clinician in the response to the patient.

These perspectives are the focus of the events described in the candidate workflows in Section 6.0.

ONC would like to receive feedback on the draft list of perspectives and their descriptions for this use case. Please suggest additions, deletions and/or revisions.

6.0 Candidate Workflows

The Remote Consultation Prototype Use Case focuses on the ability of patients to remotely communicate with their healthcare clinicians using computer technologies readily available in home and other settings such as secure, structured messaging. Similarly, a clinician's ability to initiate communications to a patient (and respond to their communications) is included. Patient caregivers, family members, and advocates may be included in these communications. Finally, reminders sent from clinicians, or EHRs, to patients are included in these workflows.

6.1 Patient-to-Clinician Communication

This workflow is focused on the patient's ability to use readily available computerized technologies to communicate with clinicians using secure, structured messaging capabilities.

- The patient initiates a structured message using a secure web browser, PHR, or other tool. Structured templates could be used to gather the needed clinical and administrative information from the patient including items such as patient identifying information, questions the patient may like to ask, or description of symptoms or problems the patient wishes to communicate to the clinician.

- Patient communications could include communications related to patient self-monitoring or chronic care as described separately in the Remote Monitoring Use Case. Although most of this communication is intended to be between devices, there may be instances where manually-entered information must be communicated.

- The clinical support staff receives and evaluates the information supplied by the patient and either:

    - Responds directly to the patient and documents the encounter. The response could occur in several ways, including such methods as a telephone call, or email advising the patient that a secure message is available to them containing sensitive clinical information; or

    - Forwards the information in summary form along with other relevant clinical information to the clinician for a response. This could be accomplished using the workflow capabilities of the clinician's EHR.

- After evaluating the patient's concerns and questions, the clinician responds either to the patient or to the clinical support staff.

    - Direct communication with the patient could occur in several ways such as a direct response in the secure system, a telephone call or an email advising the patient that a secure message is for them.

- Communication with the clinical support staff could be accomplished by using the workflow capabilities of the clinician's EHR. This communication could include instructions to be given to the patient, clinical care instructions or orders, or requests for additional information.

- During and at the conclusion of the information exchange, the clinical support staff or the clinician have needs to document the clinical encounter.

6.2 Clinician-to-Patient Communication

This workflow is focused on the clinician's ability to use secure, structured messaging capabilities to communicate with a patient.

- The clinician initiates a structured message using a secure web browser capability, EHR, or other tool. Structured templates could be used to request needed clinical and administrative information from the patient including items such as patient identifying information, questions the clinician may like to ask, or information related to a patient symptom or problem that the clinician wishes to communicate to the patient.

- Similarly, the clinician may use this secure, structured messaging capability to respond to patient communications. The clinician may also rely on clinical support staff to support this capability on behalf of the clinician.

- Communications may include web links to other information that could promote patient understanding of medical conditions and patient/clinician working relationships.

- Communications between clinicians and patients could also include additional patient-related representatives such as caregivers, family members, and patient advocates. Inclusion of these additional parties would be done in accordance with patient confidentiality privacy preferences.

- During and at the conclusion of the information exchange, the clinical support staff or the clinician documents the clinical encounter.

6.3 Clinician-to-Patient Clinical Reminders

This workflow focuses on the ability for a clinician to send relevant clinical reminders to patients regarding medical screening examinations, regular diagnostic tests, or wellness activities.

- Clinical reminders are initiated by a clinician or by automated functions within an EHR that evaluate patient-specific information to determine the need for a clinical

reminder. Reminders could include such things as annual medical checkups, medical screening examinations, immunizations or periodic requests for clinical information from the patient. Use of reminders by a clinician could be coordinated with appropriate eligibility and benefits considerations.

  - Reminders could be initiated by patient-specific clinical information which can be evaluated against evidence-based leading practice clinical guidelines incorporated into an EHR.

- Reminders could be delivered to the patient as:

  - Electronic mail informing the patient to retrieve a secure message (that may contain sensitive clinical information).

  - Messages received by the patient's PHR or other secure messaging tool.

  - Duplicate, automatic routing of mail or messages to caregivers (e.g., family member, home health nurse, or care coordinator), based on pre-established patient preferences.

ONC would like to receive feedback on the candidate workflows. Should any changes be made to the descriptions of these interactions? For those candidate workflows listed, is the working definition of key information sources and recipients sufficient? If not, what changes should be made?

Appendix A: Glossary

AHIC: American Health Information Community.

Care Coordinators: Health support personnel who provide assistance to patients and their surrogates in the management of health and disease conditions.

CCHIT: Certification Commission for Healthcare Information Technology.

Clinical Decision Support Tool Providers: Organizations that provide tools to aid in the understanding and treatment of health and disease conditions. These tools encompass a wide range of capabilities that may be useful and available to patients, consumers, clinicians, and other health professionals.

Clinical Support Staff: Individuals who support the workflow of clinicians. For this use case, this may be by receiving and evaluating communications from consumers or patients, and then engaging the appropriate clinician in the response to the patient.

Clinicians: Healthcare providers with patient care responsibilities, including physicians, advanced practice nurses, physician assistants, nurses, and other credentialed personnel involved in treating patients.

CMS: Centers for Medicare & Medicaid Services, a federal agency within the Department of Health and Human Services.

Consumers: Members of the public who may receive healthcare services. These individuals may include: caregivers, patient advocates, surrogates, family members, and other parties who may be acting for, or in support of, a patient.

Department of Health and Human Services (HHS): This is the federal agency responsible for human health, and has oversight over many other federal agencies such as FDA, the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), CMS, the Agency for Health Research and Quality (AHRQ), the Substance Abuse and Mental Health Services Administration (SAMHSA), and others.

Electronic Health Record (EHR): The electronic health record is a longitudinal electronic record of patient health information generated in one or more encounters in any care delivery setting. This information may include patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory information and radiology reports.

FDA: Food and Drug Administration.

Health Information Exchange (HIE): A multi-stakeholder entity that enables the movement of health-related data within state, regional, or non-jurisdictional participant groups.

Healthcare Entities: Organizations that are engaged in or support the delivery of healthcare. These organizations could include hospitals, ambulatory clinics, long-term care facilities, community-based healthcare organizations, employers/occupational health, school health, dental clinics, psychology clinics, care delivery organizations, and other healthcare facilities.

Healthcare Payors: Insurers, including health plans, self-insured employer plans, and third party administrators, providing healthcare benefits to enrolled members and reimbursing provider organizations.

HITSP: Healthcare Information Technology Standards Panel.

ONC: Office of the National Coordinator for Health Information Technology.

Patients: Members of the public who receive healthcare services.

Personal Health Record (PHR): A health record that can be created, reviewed, annotated, and maintained by the patient or the caregiver for a patient. The personal health record may include any aspect(s) of the health condition, medications, medical problems, allergies, vaccination history, visit history, or communications with healthcare providers.

Point-to-Point Exchange: A direct link or communication connection with defined endpoints.